

DEVELOPMENT OF METHYL ANTHRANILATE AS A BIRD REPELLENT

Kathleen A. Fagerstone
USDA/APHIS/ADC Denver Wildlife Research Center
P.O. Box 25266, Denver Federal Center
Denver, CO 80225-0266

Abstract: Methyl anthranilate (MA) is a GRAS (generally recognized as safe) food flavoring that is approved by the Food and Drug Administration as an additive to both human and livestock feeds. It occurs naturally and has the characteristic odor of Concord grapes. The major producer of MA is PMC Specialties Group, Inc. This company synthesizes the chemical as a precursor ingredient for the manufacture of calcium and sodium saccharin and has obtained a technical registration from the EPA for MA. For reasons still not completely understood, MA is a chemical irritant for birds. Every avian species examined to date (including laughing gulls, ring-billed gulls, starlings, sparrows, waxwings, red-winged blackbirds, grackles, cowbirds, mallard ducks, Canada geese, snow geese, crows, chickens, guinea fowl, pheasants, bobwhite quail and turkeys) avoids normally preferred foods when the foods are adulterated with MA.

MA has many potential applications. Researchers at the Denver Wildlife Research Center have explored a broad range of potential applications for MA as a bird repellent, including the following: 1) A wastewater additive to prevent use of ponds and puddles on airports by birds, thus reducing potential airplane hazards; 2) A waterfowl repellent to reduce waterfowl mortality on contaminated ponds; 3) A landfill cover additive to reduce foraging by nuisance gulls; 4) A repellent for use on turf to deter grazing by Canada geese; 5) A repellent to deter consumption of grain and fruit by birds; 6) A seed additive to eliminate consumption of treated seeds and granular insecticides/fungicides; 7) A livestock feed additive to deter feeding by blackbirds and starlings livestock feedlots; and 8) A deterrent for woodpeckers to prevent pecking on utility poles.

Several private companies have shown interest in registering MA with the EPA. On September 16, 1994, PMC Specialties Group, Inc. received four conditional registrations from the EPA for Methyl Anthranilate: one technical and three end-use products. The use patterns of these products are as follows:

1. REJEX-IT MA, EPA file Symbol 58035-8 (98.5% MA--technical product)
2. REJEX-IT AP-50, EPA File Symbol 58035-6 (50% MA)
 - Sites: Temporary pools of standing water and landfills
 - Species: Ring-billed gulls, Canada geese, mallards
 - Rate: Variable
3. REJEX-IT TP-40, EPA File Symbol 58035-7 (40% MA)
 - Sites: Tailing ponds, non-fishbearing impoundments, and landfills
 - Species: Starlings, brown-headed cowbirds, ring-billed gulls, Canada geese, and mallards
 - Rate: 8 lb. a.i./acre applied from ground or air
4. REJEX-IT AG-36, EPA File Symbol 58035-9 (14.5% MA)
 - Sites: Golf courses and other turf areas
 - Species: Canada geese
 - Rate: 11.6-13.8 lb. a.i./acre